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Survey of Missoula's May 1965 new car buyers' attitudes toward their recent new car purchases

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A SURVEY OF MISSOULA'S MAY 1965 NEW CAR BUYERS' ATTITUDES TOWARD THEIR RECENT NEW CAR PURCHASES

by

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CHAPTER I

INTRODUCTION

Fifty years ago, when installment credit was first introduced to the American consumer, even before its adaptation to the automobile, complaints were heard concerning the extravagance and lack of thrift that such a system of deferred payments encouraged. Perhaps, because the automobile was considered an expensive luxury to be enjoyed only by the rich, the selling of it on credit was particularly condemned. The theory advocated by early opponents of installment credit was that any plan which made it easier to purchase a luxury, such as an automobile, was inherently bad because it helped people obtain what they really could not afford.[1]

By the 1920's, the attitude both toward the automobile and toward credit had changed. The automobile was beginning to be accepted as an everyday convenience, rather than regarded as a luxury to be enjoyed only by the wealthy.[2] With the change in attitude toward the automobile, credit also became more widely tolerated rather

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[1]William A. Grimes, Financing Automobile Sales (New York: A. W. Shaw Company Limited, 1926), pp. 93-94.

[2]*Ibid*., pp. 94-95.

than outrightly condemned; that is the attitude was taken that installment credit did have some advantages.[3]

In the years of the Great Depression, automobile sales and automobile credit declined sharply. People were depression conscious and to purchase anything on credit was unheard of; not until the late 1930's and early 1940's did the American consumer, to any large degree, resume purchasing automobiles on credit.[4]

After World War II, a new attitude prevailed toward the automobile and the use of installment credit: Americans flocked by the millions to purchase what was considered twenty-five years previously a risky item of luxury. With the wide-spread acceptance of the automobile as a necessity rather than a luxury, installment credit became common in the purchase of new cars. Previous ardent opponents of installment credit realized credit's real advantages, and used installment credit in their new car purchases. In the year 1946 alone, total installment credit expanded $968 million.[5]

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[3]Board of Governors of the Federal Reserve System, Consumer Instalment Credit, Part I, Vol. I, Growth and Importance (Washington, D.C.: U.S. Government Printing Office, 1957), pp. 9-10.

[4]*Ibid*., pp. 27-28.

[5]Federal Reserve System, Consumer Instalment Credit, Part II, Vol. I, Conference on Regulation (Washington, D.C.: U.S. Government Printing Office, 1957), p. 394.

By 1955, consumers had taken a record number of new cars from dealers' showrooms, and total installment credit by the end of 1955 had expanded to a record 5.5 billion.[6]

Since 1955, installment credit terms have been liberalized. Installment credit terms for new car purchases have eased from the 18-month maturity lengths of the 1950's to where 36-month maturities have become common. Downpayment requirements have also decreased from the nationally required one-third of the new car price, twenty years ago, to as low as 15 per cent presently.

Missoula's prospective 1965 new car buyer could expect new car automobile dealers to offer such terms as these: fifteen to twenty per cent down and either 30, 36 or 42 months to pay, with the longer maturity usually associated with the lower downpayment.

Automobile dealers were willing to modify their terms in order to accommodate the customers' needs. Standards were flexible and were intended to serve as rough guides to the dealer, and not as inflexible barriers to the customer. If the buyer objected to the 30-month maturity on his contract, the dealer usually offered the customer the 36-month contract maturity. Some dealers

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[6]Federal Reserve System, Federal Reserve Bulletin, December, 1955, p. 1312.

were willing to offer 42-month maturities in order to tempt buyers who were dissatisfied with the 36-month maturities.

The downpayment standard was the most flexible of all. Although most new car dealers would like one-third or one-fourth downpayment, they were willing to modify their terms to meet the customers' individual needs.

With respect to new car purchases, the American consumer today is a very different person from his counterpart of thirty years ago. Today's consumer demands larger and more expensive cars. The automobile is no longer viewed as an expensive luxury to be enjoyed only by the wealthy, but as a necessity of daily life. American consumers have become accustomed to acquiring goods at least equal to those of their neighbors, and they are little concerned about entering debt. Almost a quarter of a century has passed since the Great Depression, and most Americans are no longer depression conscious or reluctant to incur debt.[7]

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[7]Thorstein Veblen, The Theory of the Leisure Class (New York: The Modern Library, 1934), pp. 174-176.

Aim and Scope of the Survey

It is the objective of this study to estimate how appropriately Missoula's recent new car buyers have gauged their future income and expenditures, and how they feel towards their recent new car purchases and financial arrangements. By determining how appropriately recent new car buyers have gauged their future income and expenditures, it can be determined whether Missoula's recent new car buyers are making the best decision in purchasing a new car: are some buyers spending beyond their means and later having trouble paying for their new car? By obtaining recent new car buyers attitudes toward their new car purchases, toward their financial arrangements, the question of buyer satisfaction or dissatisfaction can be determined.

It is intended that the survey will reveal answers to the following questions:

1. Did the age, income and occupation of buyers who used credit for their new car purchases differ from those who used cash?
2. What income groups utilized credit more, the higher or lower income groups?
3. What were the attitudes of Missoula's new car buyers toward their installment obligations?
4. Were Missoula's new car buyers satisfied with the financial arrangements they had negotiated on their new cars?

CHAPTER II

METHODS AND DEFINITIONS

Personal interviews were completed with 56 of Missoula's May 1965 new car buyers. On the average the interviews lasted about one hour. The buyer questionnaire included 44 questions (many of which didn't apply in all cases). The survey's buyers were asked questions concerning car price, downpayment, amount financed, the maturity of the contract and their repayment experiences.

Population Sampled

The population from which the sample was drawn consisted of 187 new car registrants for the month of May 1965. The names for the survey were drawn from the Missoula County Court House motor vehicle registration file. Information taken from the files included the name and address of each owner and make of vehicle purchased. The sample included registrations of new cars to individuals only. Business, state, and local government registrations were not included in the sample. There were three objectives in interviewing the respondents:

1. To determine if the buyer had used cash or credit in his new car purchase.
2. To determine his present attitudes toward his recent purchase.

3. To determine what the respondents thought they would do differently for their next new car purchase.

The Sampling Plan

The basic sample of 56 new car registrants was drawn by random methods from the total population sampled. The procedure used in the selection of the sample is summarized below:

1. Each item in the universe was numbered from 1 to 187 (the size of the total population).
2. Beginning at a preselected place in a table of random numbers, the sample was selected by proceeding through the table using three digits at a time. Enough digits were selected each time so the highest number in the universe (187) could be selected.
3. The sample was composed of those items selected.

Before the sample was chosen, the population (187 new car buyers) was stratified into three groups representing the three new car price ranges:

Group I --Included Chevrolet, Ford, Plymouth, and Dodge new car owners.

Group II --Included Pontiac, Oldsmobile, Buick, Mercury, and Chrysler owners.

Group III -- Included Cadillac, Lincoln, and Imperial owners.

The size of the sample drawn from each of the three groups was based upon what percentage each group purchased of the total of 187 new cars sold.

Group I new car buyers combined purchased 105 new cars. This represents 56 per cent of the 187 new cars sold (or 31 new car buyers). Accordingly, 31 new car buyers from Group I were interviewed.

Group II new car buyers purchased 76 new cars in the survey period. This represents 41 per cent of the total cars sold for the month of May 1965. Included in the survey are interviews with twenty-three buyers from Group II.

Group III new car buyers purchased five new cars in the month of May 1965. This represents three per cent of the total cars sold. Included in the survey are interviews with two buyers from Group III.

The Personal Interview

The interviews with the survey's 56 respondents were conducted by one person. Steps were taken to insure that all the respondents were interviewed in the same manner:

1. All the statements were asked exactly as worded. If a respondent did not fully

understand a statement, it was rephrased as closely as possible to the original statement.

2. While interviewing, the interviewer did not comment on the meaning of the statements or indicate in any way what kinds of answers were desired.

3. Every question was asked all the respondents.

In an effort to determine who handled the automobile arrangements in the household, the interviewer asked the adult respondent who answered the residence door whether he had participated in the selection of the new car. Over 70 per cent of the survey's female respondents were familiar with the financial aspects of the new car purchase, and were able to answer accurately the statements they were asked. If the housewife indicated she was not familiar with the new car transaction, the interviewer returned in the evening and interviewed the husband.

Types of Information Sought in Personal Interviews

The significant topics covered in the personal interviews are listed below:

1. The purchase of the new car: the cost of the new car, the trade-in allowance received on the trade-in, and the amount of credit.

2. The credit obtained, if any: the terms of

the contract, the maturity of the contract in months.

3. The new car buyer: his personal characteristics, such as, age, occupation and income in year of purchase.

4. The buyer's present attitudes and preferences: his attitude toward the new car transaction, and toward the financial arrangements made in the purchase; his experiences in repaying the credit extended to him at the time of purchase; the courses of action he believes he would have taken had larger downpayments or shorter maturities been required; his current intentions concerning future new car purchases.

Processing of the Data

In the editing process each report was examined for completeness, agreement, and for reasonableness of the reported information. Various checks for consistency were made. For example, a comparison was made between the reported purchase price of the new car with the sum of the downpayment and the unpaid balance. In cases where the car was purchased on credit, a comparison of the reported total amount of credit was compared with the reported monthly payment and the contract maturity in months. For some types of information gathered, such as the buyer's reported yearly income, balance owed on the trade-in (if any), it was not possible to check for accuracy; so the information was accepted as reported.

The buyer reports usually agreed closely with the unpaid balance, the total amount of credit, and the terms of the financial arrangement. The most frequent disagreement was found with respect to the purchase price and the amount of the downpayment. When disagreement occurred, if the buyer reported a trade-in and provided a detailed description of the car, and seemed reasonably sure of his statements, his statements were accepted as being correct.

Limitations of the Survey's Findings

The results of this survey have errors and limitations common to most surveys. The survey's results may be affected by: (1) nonresponse (2) response errors. However, because the interviewing was conducted by one person using standardized interviewing procedures, it was intended that many of the common sources of survey errors would be reduced.

Nonresponse.--By relying upon probability methods in the survey, it was intended that the sample would represent (without bias) the population from which it was selected.

Personal interviews were completed with 56 of the 187 new car buyers of May 1965. The over-all response percentage was 93 per cent.

The two problems encountered in the personal interviews were: (1) locating the buyers selected for the interview and (2) obtaining their cooperation, to what appeared to many of the buyers a bothersome inquiry. In an effort to obtain the buyer's cooperation, the interviewer explained the purpose of the interview and assured respondents that their names and responses would be kept in strict confidence.

Roughly 13 per cent of the respondents had changed residences from the time of their purchase. Efforts were made to learn the present address of those who had moved by consulting neighbors, postal authorities, and by consulting phone directories. Buyers who had moved elsewhere in Missoula were interviewed at their new addresses. Approximately four per cent were found to have moved from Missoula and could not be interviewed.

Response errors. Response errors represent misunderstanding of the statement by the respondents. They may occur from misunderstanding of the questions, substitution of guesses for unknown information, and reluctance to answer the questions asked.

To minimize response errors, the respondents were encouraged to consult any records they had available. The questionnaire was also designed to provide cross-checks of the responses; as the interview proceeded, the interviewer could discuss any obvious contradictions with the respondent.

In any study where people are asked to express their attitudes certain limitations occur. The respondent may adjust his responses to what he considers appropriate for the situation; he may also be influenced by the perception of the interviewer; he may be further influenced by what he considers to be the socially acceptable answer to the question.

My politeness, along with the good nature of most people, enabled me to obtain the respondents' full cooperation. In fact, once I began the interview the survey's respondents became interested and devoted considerable attention to carefully and accurately evaluating the statements they were asked.

CHAPTER III

SOURCES AND AMOUNTS OF CREDIT FUNDS FOR NEW CAR PURCHASES

In comparison with his counterpart nationally, Missoula's 1965 new car credit buyer used a larger amount of credit per new car purchase. Roughly 20 per cent of the survey's credit buyers still owed money on the car being traded in, and the average amount owed was sizeable.

Characteristics of Missoula's New Car Credit Buyers

In 1965 new car buyers throughout the United States purchased more expensive new cars and used larger amounts of credit than in the past 10-year period.[8] Missoula's 1965 new car buyers followed the national trend. The survey's credit buyers indicated that in comparison with past new car purchases, they had purchased more expensive new cars in 1965, and had used larger amounts of credit. The average price of new cars purchased with credit in the survey was $3,529, compared with the national average of

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[8] Federal Reserve System, Federal Reserve Bulletin, April, 1965, pp. 523-524.

\$3,020 in 1962.[9] (The following data have been adjusted for inflation and changes in new car prices.) The average amount remaining to be financed by the survey's credit buyers was \$2,352, compared with the national average of \$1,873 in 1962.[10] These differences, along with the more frequent use of credit, indicate a greater utilization among the survey's new car buyers to use credit for their new car purchases.

The survey does not indicate how many people refrained from purchasing a new car because they still owed a balance on their old car. However, the findings do show that a substantial number of new car buyers who still owed balances on their old cars bought new cars, and thereby committed themselves to larger credit obligations. One-third of the survey's new car credit buyers still owed balances on their old cars. The average amount of debt on cars being traded in was \$373.

Credit buyers in the higher income group had debt on their trade-ins more frequently than those in the middle and lower income groups.[11] The larger amounts of debt owed

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[9] Statistical Abstract of the United States, Table 796: Automobile Ownership, Age, and Financing, 1950 to 1964 (86th ed.; 1965), p. 569.

[10] Ibid.

[11] For convenience in making broad comparisons, income classes have been grouped into lower income (less than \$5,000), middle income (\$5,000-\$7,499), and upper income (\$7,500-\$10,000).

in the higher income group appear to be associated with the shorter periods they own the cars which they trade in. Less than one per cent of the credit buyers in the lower income group still owed money on their trade-ins (mean amount $417), compared with six per cent of the credit buyers in the middle income group (mean amount $258). Fifteen per cent of the credit buyers in the upper income group owed balances on their trade-ins (mean amount $428). Many of the trade-ins of buyers in the lower income groups were purchased as used cars, and the original debts were smaller than those of the middle and upper income buyers.

Amount of Credit on New Car Purchases

New car buyers in the $7,500-and-above income group assumed greater debts on their new car purchases than did middle income buyers; the smaller dollar amount of downpayment made on high priced new cars purchased resulted in larger credit commitments. Credit buyers in the upper income group paid an average of $105 more for their new cars, while the mean downpayment was $332 less than the corresponding amount for middle income buyers.

The amounts financed in 1965 were larger than in the past; the average (less finance and insurance charges), was $2,060 for the $5,000-$7,499 yearly income buyers, compared with $2,489 for the $7,500-and-over income group.

TABLE 1

FREQUENCY DISTRIBUTION OF DOWNPAYMENT AND CREDIT BY INCOME GROUPS FOR MISSOULA'S MAY 1965 NEW CAR BUYERS

	Income in Year of Purchase			
	$5,000-$7,499		$7,500 and over	
Amount of Credit	Number of Buyers	Per cent	Number of Buyers	Per cent
Less than $2,000	4	31	3	17
$2,000-$2,499	6	46	5	30
$2,500-$2,999	2	15	8	47
$3,000 and over	1	8	1	6
	13	100%	17	100%
Amount of Downpayment				
Less than $800	5	38	6	35
$800-$999	0	0	2	12
$1,000-$1,199	2	16	4	23
$1,200-$1,399	3	23	2	12
Above $1,400	3	23	3	18
	13	100%	17	100%

Roughly 23 per cent of the survey's credit buyers used credit of less than \$2,000-\$2,499; 33 per cent used \$2,500-\$2,999; the remaining 7 per cent used credit of over \$3,000. These figures differ from the national average for 1962, where new car credit buyers from all income classes financed a mean amount of \$1,873 for each new car purchase.[12]

The amount of credit also varied with different sources of financing. Buyers who financed their new car purchases through sales finance companies obtained liberal credit terms. Sales finance companies required smaller downpayments, and had longer maturities available than did banks. Banks, on the other hand, were more selective. Although banks did accept some lower quality contracts from automobile dealers, where the dealer agreed to share a portion of the credit risk, banks required larger downpayments and shorter maturities than did finance companies.

Sources of Credit for New Car Purchases

Three sources of credit were used by the survey's new car credit purchasers. Sixty-five per cent of the credit buyers used Missoula's banks to finance their new car purchases; 30 per cent relied upon sales finance companies (such as Commercial Credit Corporation and General

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[12] *Statistical Abstract*, p. 569.

Motors Acceptance Corporation); the remaining five per cent were financed by credit unions.

It is impossible to determine from the survey data whether the correlation of income and use of bank financing is attributable to selection by banks or to choice of borrowers. Upper income buyers appeared to be more accustomed to using banks, and were more familiar with their lower finance charges. To some extent, selection may have resulted from contract terms: buyers in lower income groups found smaller downpayment requirements and longer maturities available through sales finance companies that appeared better suited to their financing needs, while buyers at the higher income levels preferred the less liberal terms and lower interest charges on bank financing.

CHAPTER IV

NEW CAR INSTALLMENT CREDIT TERMS

Nationally, liberalization of credit terms for new car purchases continued during 1965; contract maturities were longer, and downpayments were smaller relative to new car prices. With smaller downpayment ratios came an increase in buyers' unpaid contract balances.[13]

Contract Maturity Related to Downpayment Ratio

A basic question is how maturity and downpayment are associated in individual contracts. Are long-term maturity contracts (36 months and over) associated with small or large downpayments?

Survey data is inconclusive: over 84 per cent of the survey's new car credit buyers financed their new car purchases for 36 months, regardless of the downpayment made. However, for over 80 per cent of the 36-month maturities, the mean downpayment made was smaller than in the 24- and 18-month maturities; the mean downpayment made for buyers with 36-month maturities was $955, compared with $1,433 for the 24-month contract maturities, and $2,000 for 18-month maturities.

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[13] Federal Reserve System, Federal Reserve Bulletin, June, 1966, pp. 770-772.

Buyer Variations

In 1965, credit terms were liberal for Missoula's new car buyers at all income levels. However, middle income buyers (with yearly incomes of $5,000-$7,499) negotiated more contracts with long maturities than did upper income buyers (with annual incomes above $7,500). See Table 2. On the other hand, upper income buyers obtained larger amounts of credit, as shown in Chapter Two; they also purchased more expensive cars, and their debts were larger than were those for middle income buyers.

TABLE 2

CONTRACT MATURITY CLASSIFIED BY INCOME GROUPS FOR MISSOULA'S MAY 1965 NEW CAR BUYERS

Contract Maturity in months	Income in Year of Purchase			
	Middle Income Buyers	Per cent	Upper Income Buyers	Per cent
30-36	12	86	13	72
24-29	1	7	3	17
18-23	1	7	1	5.5
Under 18 months			1	5.5
	14	100	18	100.0

The mean downpayment made by the survey's upper income buyers was 24 per cent; for middle income buyers 36 per cent; for lower income buyers 19 per cent. Missoula's credit buyers made smaller mean downpayments than did their credit counterpart nationally. The over-all survey mean downpayment percentage for all income groups was 26 per cent. This compares with the national average for 1962 of 38 per cent.[14]

Personal Characteristics of Missoula's New Car Buyers

When new car buyers are classified according to age and occupation, the frequency of credit use differs markedly among the different classifications of buyers. The differences appear to be closely related to variations in the buyers' financial positions.

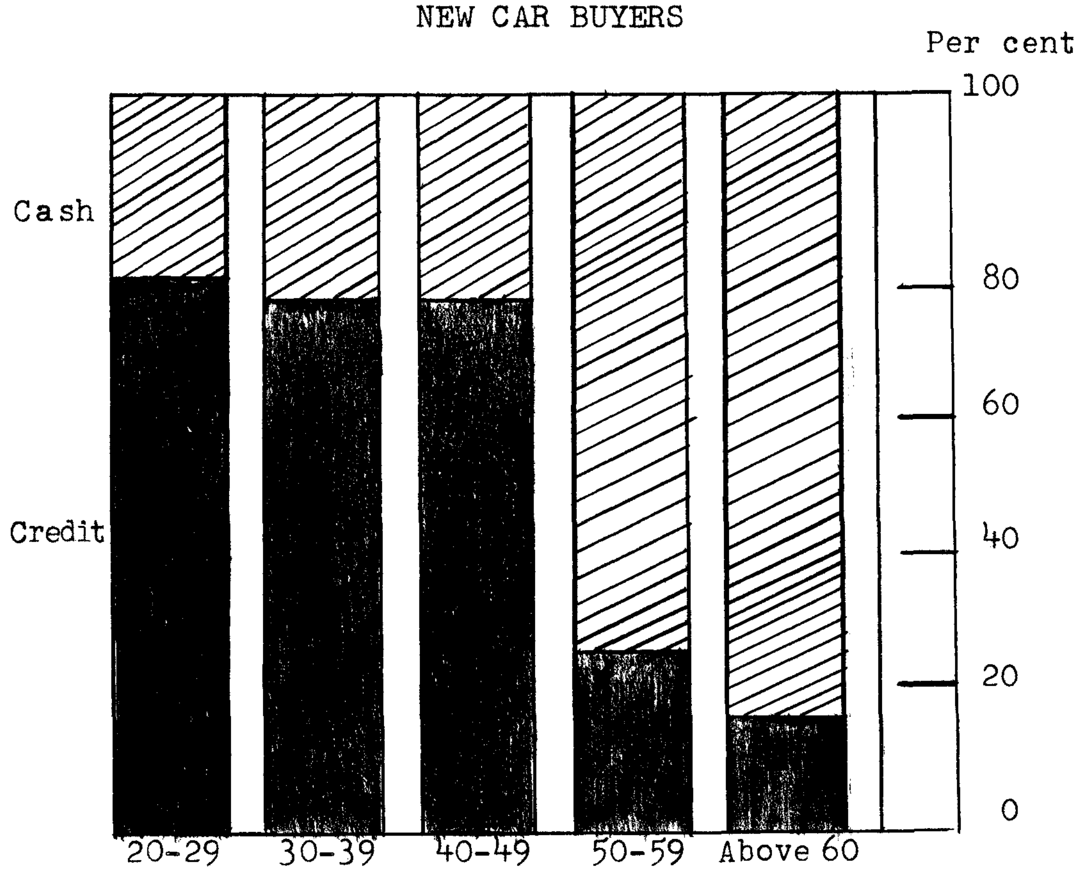
In 1965, the frequency of credit use among the survey's buyers remained about the same for buyers 18-49 years of age. (See Chart 1.) Roughly 80 per cent of the survey's buyers 18-49 used credit in their new car purchases. Buyers 50 and over used credit in only 26 per cent of their new car purchases. Older buyers, no doubt, were able to make cash purchases more often than younger buyers because they had accumulated more assets and had

[14] *Statistical Abstract*, p. 569. The data for 1962 are the latest available.

fewer responsibilities for supporting and educating a family. The least frequent use of credit in the survey was made by individuals 60 and over (Chart 1). The percentage of new car purchases made on credit by buyers in this age group was 15 per cent.

CHART 1

USE OF CASH AND CREDIT BY AGE OF BUYER FOR MISSOULA'S MAY 1965 NEW CAR BUYERS



The occupational groups that used credit most frequently in the survey were the skilled and unskilled workers. See Table 3. The least frequent use of credit in the survey was by professional workers, a fact that is not surprising when one considers that such workers are well represented in the high income classes.

TABLE 3

USE OF CREDIT BY OCCUPATION FOR MISSOULA'S MAY 1965
NEW CAR BUYERS

Occupation	Cash Buyers			Credit Buyers		
	Actual	Expected	Difference*	Actual	Expected	Difference*
Professional	6	3.0	+3.0	1	4.0	-3.0
Managerial	5	4.7	+0.3	6	6.3	-0.3
Self-Employed	5	3.4	+1.6	3	4.6	-1.6
Clerical	1	1.3	-0.3	2	1.7	+0.3
Skilled	1	4.3	-3.3	9	5.7	+3.3
Semi-Skilled	4	3.0	+1.0	3	4.0	-1.0
Unskilled	1	2.6	-1.6	5	3.4	+1.6
Sales	1	1.7	-0.7	3	2.3	+0.7

*The two difference columns represent the variation between the expected and the actual use made of cash and credit.

CHAPTER V

CREDIT AND CASH BUYER'S ATTITUDES TOWARD THEIR FINANCIAL AND CREDIT ARRANGEMENTS

When a person makes a cash downpayment on a new car he indicates his belief that he will continue to want for a long time what he wants today. If he buys on credit, he makes the added decision that he knows now what his future income and expenditures will be and how he intends to spend them. The problem is that some new car buyers fail to determine realistically their future income and expenditures at the time of purchase. As a result, these buyers can later have regrets and misgivings about their recent new car purchases.

The survey's buyers had lived with their purchases eight months when they were interviewed. The survey thus provided the opportunity to inquire about how appropriately Missoula's new car buyers had anticipated their needs and their incomes, and whether their feelings had changed toward their new car purchases. The buyers were asked to evaluate a series of statements designed to find out what cash and credit buyers thought in February-March, 1966, about their May 1965 new car purchases and financial arrangements, how credit buyers thought they would have acted at the time of purchase if credit had not been available on such liberal terms, and what experience they had with their car payments.

The great majority of cash and credit buyers indicated they were satisfied with the deal they had arranged eight months earlier in buying their new cars. A larger number of installment buyers than of cash buyers expressed doubts towards their deals.

When the survey's buyers were asked about the financial arrangements they made in buying their cars, cash buyers were almost unanimously satisfied; however, 20 per cent of installment buyers expressed dissatisfaction with some aspect of their arrangements. Roughly 13 per cent of installment buyers expressed dissatisfaction with their monthly payments and contract maturities.

When asked what they would have done if they had been required to make larger downpayments, or to make larger monthly payments when they purchased their cars, 59 per cent of the buyers said they would have made the same new car purchase. Increasing the required downpayment appeared to have influenced their buying intentions more than increasing the monthly payment.

Credit and Cash Buyers' Attitudes toward the Deals They Made on Their New Car Purchases

To determine buyers' attitudes toward the deals they made, they were asked to evaluate four statements.

1. I made a good deal on my new car.
2. The deal I made on my new car was better than most people make.
3. I am dissatisfied with the deal I made on my new car.
4. When I bought my new car I was satisfied with the deal I made, but I am now dissatisfied.

Credit buyers' responses to the statement, "I made a good deal on my new car," revealed that 75 per cent of the survey's credit buyers believed they had made a good deal on their new car compared with 91 per cent of the cash buyers. The results indicate that in general cash buyers are happier with the deals they had negotiated on their new cars than are credit buyers. However, when the data are examined using the Mann-Whitney U test, a nonparametric test, the results indicate that no significant statistical difference exists between cash and credit buyers' attitudes toward the deals they had negotiated on their new car purchases.[15]

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[15]A description of the Mann-Whitney U test and the mathematical computations of the data are presented in the Appendix.

In response to the statement, "The deal I made on my new car was better than most people make," 81 per cent of the survey's cash buyers believed their deals were better than most people make, compared with 43 per cent of the survey's credit buyers. The data indicate that cash buyers as a group believed they had negotiated better deals on their new cars than do most people. However, when the data were examined using the Mann-Whitney U test, no significant statistical difference was found between the attitudes of cash and credit buyers toward the deals they had negotiated.

Given the item, "I am dissatisfied with the deal I made on my new car," both cash and credit buyers indicated they were satisfied with the deals they had contracted on their new cars. Less than three per cent of the survey's credit buyers said they were dissatisfied with their deals, compared with four per cent of the cash buyers. Again, when the data are analyzed using the Mann-Whitney U test, no significant statistical difference was found between the satisfaction of cash and credit buyers.

In reply to the item, "When I bought my new car I was satisfied with the deal I made, but I am now dissatisfied," both cash and credit buyers responded with a high level of satisfaction. Less than six per cent of the survey's credit buyers expressed dissatisfaction with their deal, compared with four per cent of the cash buyers.

Application of the Mann-Whitney U test to the data revealed that no significant statistical difference existed between the number of dissatisfied cash and credit buyers.

The survey's buyers gave many reasons why they felt as they did about their 1965 new car deals, and most of the responses concerned the price of the new car or the trade-in allowance on the old car: over half reported a favorable trade-in allowance; the remainder of the buyers emphasized a favorable new car price. Credit buyers emphasized trade-in allowance more than did cash buyers in accounting for their satisfaction.

Buyers who reported doubts as to the deals they made on their new cars emphasized price more than anything else. Dissatisfaction with credit arrangements also accounted for some of the buyers' doubts about their purchases. Some buyers complained about their trade-in allowances on their old cars, the performance of the new cars, and the service they had received from new car dealers.

Buyers' Attitudes toward Their Financial Arrangements

In order to explore buyers' attitudes toward the financial arrangements they made on their new car purchases, they were asked their feelings toward the following statements. Credit buyers were asked:

1. I now feel that using installment credit in purchasing my new car was a good idea.
2. Although I financed my new car on installment credit, I now wish I would have waited until I had cash before buying.
3. I am now dissatisfied with using installment credit to pay for my new car.

Cash buyers were asked:

1. I now feel that paying cash for my new car was a good idea.
2. I paid cash for my new car, but if I had it to do again I would use credit.
3. I am dissatisfied with paying cash for my new car, but I am uncertain what payment plan I should have used.

In response to the statement, "I now feel that using installment credit in purchasing my new car was a good idea," credit buyers appeared less satisfied than cash buyers. Cash buyers' responses to the statement, "I now feel that paying cash for my new car was a good idea," indicated they were extremely well satisfied. Thirty-two per cent of the survey's credit buyers had some doubts about using credit for their new car purchases; in contrast over 96 per cent of the survey's cash buyers said they were satisfied with using cash. When the data were examined using the Mann-Whitney U test, a significant statistical difference was found. The respondents were asked to rank their responses to the statements along a scale ranging from 1 to 7 (1 representing extreme satisfaction and 7 representing extreme dissatisfaction). For cash buyers the median score was 1, compared with 4 for credit buyers. By application of the Mann-Whitney U test to the data, the likelihood of finding a difference as large as 6.1 (1.64 being regarded as the lowest significant difference score), by chance was less than one per cent; therefore, it was assumed a difference did exist between cash and credit buyers' attitudes toward using cash and credit in their new car purchases.

In evaluating the statement, "Although I financed my new car on installment credit, I now wish I would have waited until I had cash before buying," 87 per cent of the survey's credit buyers believed they had made the best decision to use credit and not wait until they had cash before purchasing their new cars. Cash buyers responded to the statement, "I paid cash for my new car, but if I had it to do again I would use credit," with an equally high degree of satisfaction. Eighty-seven per cent of the survey's cash buyers were satisfied with using cash. When the Mann-Whitney U test was applied to the data, no significant statistical difference was found between the attitudes of cash and credit buyers toward the desirability of using cash and credit in a new car purchase.

When asked to evaluate the statement, "I am now dissatisfied with using installment credit to pay for my new car," credit buyers expressed satisfaction with using installment credit for their new car purchases. Cash buyers responded to the statement, "I am now dissatisfied with paying cash for my new car, but I am uncertain what payment plan I should have used," with a high degree of satisfaction. Eighty-four per cent of the survey's cash buyers said they were satisfied with using cash for their new car purchase, compared with 87 per cent of credit buyers. It appeared that a difference did exist between the satisfactions of cash and credit buyers, but when the Mann-Whitney U test was applied to the data, no significant statistical difference was found.

Credit buyers, in evaluating their satisfaction with their financial arrangements, seldom mentioned carrying charges. This appears to support the opinion often expressed that many credit buyers are unaware of the high cost of credit. In contrast, the survey's cash buyers frequently mentioned carrying charges as a factor for their choice of cash over credit in a new car purchase.

Buyers with the more liberal credit terms--those who made small downpayments--reported dissatisfaction with their financing arrangements more frequently than buyers who made larger downpayments. Over 20 per cent of the buyers who made downpayments of less than 25 per cent reported dissatisfaction with some aspect of their financial arrangements. In contrast, fewer than five per cent of the buyers who made downpayments of 30 per cent or more reported dissatisfaction.

The majority of the dissatisfied installment buyers were unhappy about their financial arrangements because they preferred to buy for cash, but were unable to afford cash. The preference for cash was expressed most frequently by the buyers who negotiated the least liberal credit terms.

Buyers' Feelings toward the Amount of Their Monthly Automobile Payments

In an attempt to determine whether or not the survey's buyers were satisfied with the amount of their monthly automobile payments, they were asked to evaluate the following statements:

1. The amount of my monthly automobile payment fits my budget about right.
2. I feel the amount of my monthly automobile payment is too high.
3. I am not sure if I like the amount of my monthly automobile payment.

Fewer than 12 per cent of the survey's buyers indicated they were dissatisfied with the amount of their monthly automobile payments. Of the buyers who expressed dissatisfaction with the amount of their monthly automobile payment, all had negotiated more liberal contract terms than the over-all survey average. The average monthly automobile payment made by the dissatisfied buyers was $96 per month, compared with the survey average of $82. The average amount financed by the survey's dissatisfied buyers was also large when compared with the survey's other buyers. The mean amount financed by the dissatisfied buyers was $2,657, compared with the survey mean of $2,352.

When viewed in larger perspective, the dissatisfied buyers represent a small minority of the survey's buyers. Their dissatisfaction appears to result from a wearing off of the novelty of the new car, and the pinch of the high monthly payments.

Buyers' Attitudes toward Repossession

By examining buyers' attitudes toward repossession, it is possible to determine how appropriately the survey's buyers had anticipated their future incomes and expenditures at the time of purchase. Were the survey's credit buyers having trouble paying for their new cars, or were they paying for their new cars as they had anticipated? Credit buyers were asked to evaluate a series of statements, designed to determine whether they had encountered sufficient financial difficulty in paying for their new cars that they had considered repossession. Buyers were asked to evaluate the following statements:

1. I have considered letting my car go back to the dealer because I cannot pay for it.
2. I would never let a car go back to the dealer even if I had trouble paying for it.
3. I am uncertain if I would ever let a car go back to the dealer.

In response to the first statement, 14 per cent of the survey's buyers reported that they had considered having their new cars repossessed because they were having trouble paying for them. However, none of these buyers had actually had his car repossessed. The majority of buyers who had considered repossession reported that they had experienced substantial decreases in income since buying their cars. Many were seasonal workers, such as logging truck drivers and construction workers who had difficulty finding winter work.

Thus 14 per cent of the survey's credit buyers at the time of purchase felt they had not made the best decision in purchasing their new cars, and later had to make readjustments in their expenditures to pay for their new cars.

Buyers' attitudes and reactions to the second and third statements varied according to age groups. The majority of young buyers, 32 years old and younger, indicated they would turn their cars in if they encountered sufficient difficulty in paying for them. They seemed to believe credit would be available in the future, regardless of whether they finished paying for their present cars. They also felt to have a car repossessed was not particularly disgraceful. In contrast, the majority of older buyers indicated they would never consider having a car repossessed even if they had trouble paying for it. They believed to have anything repossessed was a disgrace--a black mark against their credit.

Buyers' Repayment Experiences on Their New Cars

Buyers can encounter financial difficulties without finding it necessary to miss their monthly car payments or having to negotiate readjustments in their payment schedules. The interviews included a number of statements designed to help indicate how the repayment burden appeared to the buyer. The survey's credit buyers were asked to evaluate the following statements:

1. To make the payments on my new car purchase I have had to cut down on other things more than I had expected.
2. I have not had to cut down on other things to make the monthly payments on my new car.

Twelve per cent of the survey's credit buyers reported they had found it necessary to make cutbacks to meet their monthly car payments. The buyers who reported they had reduced expenditures on other things more than they had expected all reported yearly incomes of between $5,000 and $7,499. One hundred per cent of the buyers who found it necessary to make cutbacks indicated they had experienced substantial decreases in income since buying their cars. They attributed their income decreases to various factors: illnesses, periods of unemployment, and decreases in business profits.

Apparently the buyers had in mind only the difficulty of making their payments, since they continued to pay on schedule; in fact, the survey's credit buyers of May 1965 achieved an excellent repayment record up to the time of the interview (February-March, 1966). In all income groups, credit buyers reported their repayments had been as good or better than those required by their contracts.

Credit Buyers' Attitudes toward Less Liberal Credit Terms

An important question concerning installment buying is the effect on the buyer of tighter credit terms, such as a larger downpayment or larger monthly payments. Would he still have made the same purchase if he had been required to make a larger downpayment or larger monthly payments? The data here is based upon answers made by credit buyers of new cars in May 1965 to the statements:

1. If I had to make a larger downpayment on my new car, I would not have bought.
2. I am not sure if I would have bought my new car if I had to make a larger downpayment.
3. If I had to make a larger downpayment on my new car, I would have bought anyway.

Statements relating to larger monthly payments:

1. If I had to make larger monthly payments on my new car, I would not have bought.
2. I am not sure whether I would have bought my new car if I had to make larger monthly payments.
3. If I had to make larger monthly payments on my new car I probably would have bought anyway.

The limitations of the buyers' responses are obvious: they were asked to look back eight to ten months and indicate what they would have done under different circumstances. What they said in February and March, 1966, should be taken as expressing the buyers' best judgments concerning the alternative courses of action they believed they would have taken.

Roughly nine-tenths of the survey's buyers expressed an opinion as to their probable reaction to a larger downpayment. Fifty-nine per cent of the buyers said they would not have bought their cars if they had been required to make a larger downpayment; 32 per cent said they would have bought anyway; and 9 per cent were uncertain. Buyers who made the larger cash downpayments appeared to be more willing to pay still more. In contrast, buyers who negotiated more liberal terms were unwilling to make a larger cash downpayment.

Eighty-nine per cent of the buyers interviewed expressed an opinion as to their probable reaction to larger monthly payments. A comparison of their responses with those to the downpayment statements suggests that the survey's buyers attached more weight to the downpayment than to the monthly payment. Thirty per cent said they would not have bought their cars if they had to make larger monthly payments; nine per cent indicated they were not sure whether they would have bought; and 61 per cent indicated they would probably have bought anyway.

When the buyers who said they would not have bought their new cars if they had to make a larger downpayment or larger monthly payment were asked what they would have done, most said they would have waited until they could have afforded a new car. The remainder indicated they would have shifted to a cheaper new car, or bought a late model used car. Lower priced new cars were mentioned as the alternative more often than were used cars.

With respect to both larger downpayments and to larger monthly payments, the proportion of buyers who indicated they would not have bought a car differed little from one income level to another. This finding is surprising since one might think upper income buyers usually buy more expensive cars than do lower income buyers. Thus, they have more room to adjust their prices downward and still remain in the new car market.

Liberal installment terms clearly influenced many of the survey's buyers to purchase new cars. Over half of the credit buyers reported they would not have bought their new cars if they would have had to make a larger downpayment or had to finance their cars for a shorter maturity. Buyers who had negotiated the more liberal credit terms on their new cars reported dissatisfaction more often than those who negotiated the less liberal credit terms.

CHAPTER VI

BUYERS' PLANS FOR THEIR NEXT NEW CAR PURCHASE

A final inquiry made of the survey's buyers of May 1965 involved two statements:

1. Thinking about your next new car purchase, what is the highest monthly automobile payment you feel your family budget can afford? Just tell me what letter comes closest:
   - A. Less than $50 per month
   - B. $60 per month
   - C. $70 per month
   - D. $80 per month
   - E. $90 per month
   - F. $100 per month
   - G. Over $100 per month
   - H. Cash
2. Thinking about your next new car purchase, how good for you are each of these plans?
   - A. I prefer to finance my next new car for 1 year.
   - B. I prefer to finance my next new car for 2 years.

C. I prefer to finance my next new car for 3 years.

These findings should be viewed as largely impressionistic. The buyers in some cases were unable to define or express their attitudes precisely, and they sometimes omitted facts that appeared to reflect their own shortcomings. Their estimates regarding what they thought they would do in the future have obvious limitations. Nevertheless, the opinion that emerges from these interviews is significant in that it indicates what the survey's buyers think they would do differently on their next new car purchases.

A larger number of buyers interviewed expressed a preference for paying cash in their next new car purchases than had paid cash in 1965. Forty-two per cent of the survey's new car purchases in 1965 were for cash. In contrast, 16 per cent of the credit buyers expressed a preference for cash for their next new car purchases. (See Table 4, page 44.) However, eight per cent of the survey's present cash buyers indicated they would use credit for their next new car purchases. They gave the following reasons for not wanting to use cash again: they believed to withdraw money from the bank or to liquidate stocks and bonds as they had done on their present cars was unwise; they indicated in past experiences they had found automobile dealers more cooperative in performing new car service work if the buyer had not paid cash.

TABLE 4

PREFERRED FINANCING PLAN FOR NEXT NEW CAR PURCHASE FOR MISSOULA'S MAY 1965 NEW CAR BUYERS

Method of financing May 1965 purchase	Financing plan preferred for next new car purchase*			
	Cash	Credit (maturity in months)		
		Under 24	25-30	31-36
Financing plan used:				
Cash	22			2
Credit (maturity in months)				
Under 24	3	1		
25-30			2	
31-36	2	5	2	17

*The figures represent the 32 credit and 24 cash buyers preferred future financial arrangements for their next new car purchases.

Many buyers indicated when they bought again they would use shorter maturities than they had arranged before. In 1965, 81 per cent of the credit buyers negotiated 36-month maturities. In contrast, 59 per cent of the buyers indicated they intended to negotiate 36-month maturities for their next purchase. The general attitude expressed by the survey's credit buyers toward long maturities was:

long maturities (36 months and over) were a necessity rather than a choice. Many said if they had financed their present purchase for less than 36 months, their monthly car payment would have been prohibitively high. For example, the average monthly payment made by 36-month maturity buyers was $81 per month. If they would have financed the same amount for a 24-month maturity period, the average monthly car payment would have jumped to $109.49.

Buyers' Preferences for Future Monthly Payments

In response to the first statement asked, 24 per cent of the survey's buyers indicated they desired lower monthly payments for their next new car purchases. (See Table 5, page 46.) Of the buyers who expressed a desire for lower monthly payments on their next new car purchases, 95 per cent had negotiated 36-month maturities on their present cars and had obligated themselves to large monthly payments. Their average monthly payments was $96. One hundred per cent of the buyers who desired lower monthly payments on their next new car purchases owed balances on their trade-ins ranging from $275 to $575. Judging from their attitudes and responses, 24 per cent of the survey's credit buyers regretted the liberal terms they had negotiated on their new cars. They appeared determined to complete paying for their present cars before trading them and to negotiate lower monthly payments on future new car purchases.

TABLE 5

PREFERRED MONTHLY PAYMENT FOR NEXT NEW CAR PURCHASE
BY MISSOULA'S MAY 1965 NEW CAR BUYERS

Present monthly car payment	Preferred future monthly payment*						
	Under $50	$50-59	$60-69	$70-79	$80-89	$90-99	Over $100
Under $50	3		1				
$50-$59				1			
$60-$69		1				2	
$70-$79				3	2	1	
$80-$89					3	1	
$90-$99				1	3	3	
Over $100				2	3		2

*The figures represent the survey's 32 credit buyers' preferences for amount of their next new car payment.

Many of the buyers who had negotiated high monthly automobile payments (above $90 per month) had large families, and reported modest yearly incomes. For example, a buyer who had three pre-school-age children and reported before tax an annual income of $5,600 purchased a new car. To purchase his new car he had to borrow $700 from a finance company to complete paying for his old car, and to make a downpayment on his new car. His monthly obligation to own his new car is $23 a month to a finance company and $87 a month to a bank. This buyer has had trouble paying for his new car, and indicated he now regrets buying it.

The majority of the survey's buyers (76 per cent) indicated they were satisfied with the amount of their monthly automobile payments. In fact, 24 per cent said they could have payed substantially more per month for a car if necessary.

The differences between what the survey's buyers did in May of 1965 and their plans for the future may be affected by the fact that they will be older when they buy their next cars. The demand for credit is usually greater at the younger ages, because financial needs are higher and resources lower. Buyers seemed to indicate hope that they would be in better financial condition by the time they purchased their next new cars. The majority of the survey's buyers did not look upon going into debt with complete indifference. Rather, they had a real preference for paying cash and paying their debts quickly.

CHAPTER VII

SUMMARY AND CONCLUSIONS

The availability of installment credit on easy terms in 1965 stimulated many new car purchases. In 1965 the survey's credit buyers outnumbered cash buyers 2.3 to 1; in upper and lower income classes 3.5 to 1. Other factors also accounted for the high volume of new car purchases. High levels of employment and large yearly incomes increased the number of potential new car buyers. The new fast back look and the new emphasis on safety were well accepted by the public. The automakers' intense promotional efforts also helped to contribute to the high volume of new car sales.

The view held by most people that the longer maturities are usually negotiated by buyers with the better credit ratings and large equities in their cars was not confirmed by the survey. In the survey period the contrary was found; buyers with lower credit ratings and smaller equity positions negotiated the longer maturities.

In the survey, middle income buyers ($5,000-$7,499) bought more frequently for cash than did lower and upper income buyers, and when they used credit they made larger downpayments on lower priced cars than did their upper income ($7,500-$10,000) counterpart. Middle income buyers more often had completed paying for their present cars before trading than did upper income buyers. Credit buyers in the middle income class used less credit per car than those with higher incomes.

When the survey's new car buyers were asked in February-March, 1966 about their reactions to the deals they made in May 1965, the great majority indicated they were satisfied with their "deals"; over 70 per cent said they had made particularly good deals. Credit buyers reported doubts more often than cash buyers; the number of dissatisfied credit buyers was greatest among the buyers who had negotiated the more liberal terms. One in four of the installment buyers reported dissatisfaction with his contract, usually because he had encountered difficulty in meeting his monthly car payments.

The availability of liberal installment terms influenced many consumers to buy new cars. Fifty-nine per cent of the credit buyers said they would not have made the same purchase at the time if substantially larger down payments or shorter maturities had been required. On the other hand, many credit buyers in considering their future purchases indicated they intended to use cash if possible. Many who intended to use credit financing in future new car purchases expressed a desire to negotiate shorter maturities than they had used in 1965.

The liberal credit terms of 1965 resulted in lower equity positions for many of the survey's buyers. Twenty-four per cent of the survey's credit purchasers negotiated contracts that incorporated several hundred dollars of existing debt on their old cars.

Credit developments in 1965 seem to indicate that any more liberalization of credit terms (lengthening of maturities, decreasing of downpayments) will be unlikely. Credit terms appear to have approached the limits of risk that lenders are willing to expose themselves to and buyers are capable of handling. However, these limits can be tested only by experience; only time will prove if the new credit standards will prove acceptable to both the financing organizations and the credit buyer.

The average credit commitment for the survey's new car buyers was in excess of 35 per cent of the buyers' yearly incomes. With buyers purchasing new cars more frequently and relying upon lower downpayments and longer maturities and with many of the survey's buyers determined not to negotiate such liberal credit terms in the future, there is a real question whether an increase in the number of credit purchases in 1965 can be duplicated in the near future.

Concluding Observations

Although the easy availability of installment credit on excessively liberal terms may in some cases encourage financial irresponsibility by the buyer that can lead to personal misfortune for him and his family, most consumer borrowing is not of this kind. The consequences of unwise borrowing are heaviest among the lower income groups. It is among these groups that the danger is greatest that aggressive practices used by some sellers will encourage excessive borrowing. For many persons, unwise borrowing and buying lead to financial problems. For them debt creates economic burdens.

There is the possibility that at the time of purchase the consumer may have miscalculated his future scale of preferences and his future income so that at the time of repayment he finds he is paying for something he no longer wants.

Any purchase of an automobile, however paid for, creates the possibility of such a misallocation of income--to the extent that it reduces the consumer's flexibility to respond to changes in his scale of preferences. The purchase of a new automobile may result in an economic burden to the buyer if the calculations on which he based his decision to buy later prove to be wrong.

The easy availability of credit financing does encourage and make possible purchases that would not otherwise have been made. In other words, these installment-financed purchases of new automobiles may be made on the basis of erroneous estimates of future preferences. To the extent that this is the case, the installment method of purchasing a new car may encourage misallocation of income that later may constitute an economic burden to the buyer.

The availability and extensive use of installment credit have enabled automobile buyers to expand their credit commitments. In this respect, installment credit has increased the possibility of miscalculations and misallocations of the buyer's income. The ready availability of installment credit enables more consumers to make substantial commitments without having to weigh carefully the relative advantages of different uses of their incomes, and without having to think about or plan for the future. The entire automotive sales apparatus works to encourage such credit commitments. The danger as I see it is in the very nature of the terms of the time sales agreements. In many instances, the customer who finances a car on a low downpayment for 36 to 42 months has little or no equity in the car until the first 18 months have elapsed. This low downpayment and forever-to-pay method of merchandising has not only caused the retail buyer to suffer abnormal depreciation losses which may result in total loss of his investment through repossession, but has also injured the reputations of those people engaged in the automobile sales business.

Buyer's Burden When Income Declines

A more important consideration than the burden of installment debt at any one time is the potential burden in the event the buyer's income declines. If an unforeseen decline in the buyer's income does occur, an element of inflexibility is introduced in the buyer's ability to meet and adjust to the new situation. The seriousness depends on the extent of the income decline and the distribution of income to meet other obligations.

The cost to the borrower of abandoning his commitment on an automobile installment contract may be quite high. It involves loss of equity (if any) built up in the car purchased on credit; loss of the use of the car, which may have to be replaced by another purchase; and loss of credit standing, which can be very serious. Since it is not known in advance whose income will decrease, and by how much or for how long, I believe much can be done toward the overextension of credit to seasonal workers and other marginal credit risks by the application of sound installment loan principles.

The extension of credit to seasonal workers and other marginal credit risks calls for policy decisions of a high order. Financial institutions engaging in such installment lending should evaluate carefully the credit standing of such buyers. Only by asking themselves certain relevant questions can a financial institution properly evaluate a customer's credit worthiness:

1. Has the applicant handled other credit transactions in a reliable manner?
2. Is the additional credit applied for clearly within the paying capacity of the applicant when considered along with any other obligations he must meet during the term of the loan?
3. Has the applicant maintained stability in employment?
4. Has the applicant completed paying for his present car?
5. Does the applicant have sufficient downpayment so the value of the contract outstanding remains below the wholesale value of the car? Sound terms are attained when the downpayment on the automobile purchased is large enough to provide the consumer with equity at the time of purchase; thereafter, the number of months to maturity should keep the amount of the contract below the car's wholesale value.

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APPENDIX

"When a least ordinal measurement has been achieved, the Mann-Whitney U test may be used to test whether two independent groups have been drawn from the same population."[16] For the purposes of this study the Mann-Whitney U test has been used to test whether a significant statistical difference existed between cash and credit buyers' attitudes toward the statements they were asked to evaluate.

Method

Let N_1 = the number of cases in the larger of two independent groups of credit buyers, and let N_2 = the number of cases of cash buyers in the smaller. To apply the U test to the data, we first combine the observations or scores from both groups and rank these in order of increasing size. In this ranking algebraic size is considered, i.e., the lowest ranks are assigned to the smallest numbers.

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[16]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), p. 116.

EXHIBIT A

Cash and credit buyers' response to the statement, "I made a good deal on my new car."

Respondent	Credit buyer	Rank	Respondent	Cash buyer	Rank
1	5	56	1	4	51.5
2	4	51.5	2	4	51.5
3	4	51.5	3	3	42
4	4	51.5	4	3	42
5	4	51.5	5	3	42
6	4	51.5	6	3	42
7	4	51.5	7	3	42
8	3	42	8	2	24
9	3	42	9	2	24
10	3	42	10	2	24
11	3	42	11	2	24
12	3	42	12	2	24
13	3	42	13	2	24
14	2	24	14	2	24
15	2	24	15	2	24
16	2	24	16	2	24
17	2	24	17	2	24
18	2	24	18	2	24
19	2	24	19	2	24
20	2	24	20	2	24
21	2	24	21	1	6
22	2	24	22	1	6
23	2	24	23	1	6
24	2	24	24	1	6
25	2	24			R_2=649.0
26	1	6			
27	1	6			
28	1	6			
29	1	6			
30	1	6			
32	1	6			
		R_1=947			

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{2} - R_2$$

$$U = (32)(24) + \frac{24(24+1)}{2} - 649$$

$$U = 419$$

Knowing that U = 419, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)(N_1 + N_2 + 1)}{12}}}$$

$$= \frac{419 - \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)(32+24+1)}{12}}}$$

$$= \frac{419 - 384}{\sqrt{3648}} = \frac{35}{60.4}$$

$$= .58$$

Reference to a table of probabilities associated with values as extreme as observed values of Z in the normal distribution reveals that $Z \geq .58$ has a one-tailed probability of occurrence by chance of 28 times in 100. We conclude, therefore, that on this statement cash and credit buyers did not differ significantly.[17]

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[17] Ibid., p. 123. (Here a more complete description of the formulas and terms used are found. On page 247 the reader will find a table for observed values of Z.)

EXHIBIT B

Cash and credit buyers' response to the statement, "The deal I made on my new car is better than most people make."

Respondent	Credit buyer	Rank	Respondent	Cash buyer	Rank
1	7	55.5	1	7	55.5
2	6	53	2	5	48
3	6	53	3	4	38.5
4	6	53	4	4	38.5
5	5	48.5	5	4	38.5
6	5	48.5	6	4	38.5
7	5	48.5	7	4	38.5
8	5	48.5	8	3	28.5
9	5	48.5	9	3	28.5
10	4	38.5	10	3	28.5
11	4	38.5	11	3	28.5
12	4	38.5	12	3	28.5
13	4	38.5	13	2	20
14	4	38.5	14	2	20
15	4	38.5	15	2	20
16	4	38.5	16	2	20
17	4	38.5	17	2	20
18	4	38.5	18	2	20
19	3	28.5	19	2	20
20	2	20	20	1	7
21	2	20	21	1	7
22	2	20	22	1	7
23	2	20	23	1	7
24	1	7.5	24	1	7
25	1	7.5			
26	1	7.5			R_2=613.5
27	1	7.5			
28	1	7.5			
29	1	7.5			
30	1	7.5			
31	1	7.5			
32	1	7.5			
		R_1=979.5			

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{2} - R_2$$

$$U = (32)(24) + \frac{24(24+1)}{2} - 614$$

$$U = 454$$

Knowing that U = 454, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)(N_1+N_2+1)}{12}}}$$

$$= \frac{454 - \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)(32+24+1)}{12}}}$$

$$= \frac{454 - 384}{\sqrt{3648}} = \frac{70}{60.4}$$

$$\cong 1.1$$

Reference to Table A (p. 247) reveals that Z≥ 1.1 has a one-tailed probability of there being a difference this large by chance of 13 chances in 100. Therefore, we concluded no significant statistical difference existed between cash and credit buyers.

EXHIBIT C

Cash and credit buyers' response to the statement, "I am dissatisfied with the deal I made on my new car."

Respondent	Credit buyer	Rank	Respondent	Cash buyer	Rank
1	7	43	1	7	43
2	7	43	2	7	43
3	7	43	3	7	43
4	7	43	4	7	43
5	7	43	5	7	43
6	7	43	6	7	43
7	7	43	7	7	43
8	7	43	8	7	43
9	7	43	9	7	43
10	7	43	10	7	43
11	7	43	11	7	43
12	7	43	12	6	21
13	7	43	13	7	43
14	7	43	14	6	21
15	7	43	15	6	21
16	7	43	16	6	21
17	7	43	17	6	21
18	6	21	18	6	21
19	6	21	19	5	10
20	6	21	20	4	7
21	6	21	21	3	5
22	6	21	22	3	5
23	6	21	23	2	5
24	6	21	24	2	2
25	6	21			
26	6	21			R_2=632
27	5	10			
28	5	10			
29	5	10			
30	5	10			
31	3	5			
32	2	2			
		R_1=967			

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{2} - R_2$$

$$U = (32)(24) + \frac{24(24+1)}{2} - 632$$

$$U = 436$$

Knowing that U = 436, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)(N_1+N_2+1)}{12}}}$$

$$= \frac{436 - \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)(32+24+1)}{12}}}$$

$$= \frac{436 - 384}{\sqrt{3648}} = \frac{52}{60.4}$$

$$= .86$$

Reference to Table A (p. 247) indicates that $Z \geq .86$ has a one-tailed probability of there being a difference between cash and credit buyers on this statement of .38 chances in 100.

EXHIBIT D

Cash and credit buyers' response to the statement, "When I bought my new car I was satisfied with the deal I made, but I am now dissatisfied."

Respondent	Credit buyer	Rank	Respondent	Cash buyer	Rank
1	7	44	1	7	44
2	7	44	2	7	44
3	7	44	3	7	44
4	7	44	4	7	44
5	7	44	5	7	44
6	7	44	6	7	44
7	7	44	7	7	44
8	7	44	8	7	44
9	7	44	9	7	44
10	7	44	10	6	21
11	7	44	11	6	21
12	7	44	12	6	21
13	7	44	13	6	21
14	7	44	14	6	21
15	7	44	15	6	21
16	7	44	16	6	21
17	6	21	17	6	21
18	6	21	18	6	21
19	6	21	19	6	21
20	6	21	20	5	7
21	6	21	21	5	7
22	6	21	22	5	7
23	6	21	23	5	7
24	6	21	24	2	1
25	6	21			
26	6	21			R_2=635
27	6	21			
28	5	7			
29	5	7			
30	5	7			
31	4	2.5			
32	4	2.5			
		R_1=1021			

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{2} - R_2$$

$$U = (32)(24) + \frac{24(24+1)}{2} - 635$$

$$U = 433$$

Knowing that U = 433, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)(N_1+N_2+1)}{12}}}$$

$$= \frac{433 - \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)(32+24+1)}{12}}}$$

$$= \frac{433 - 384}{\sqrt{3648}} = \frac{49}{60.4}$$

$$= .81$$

Reference to Table a (p. 247) reveals that $Z \geq .81$ has a one-tailed probability of there being a difference this large by chance between cash and credit buyers on this statement of 21 chances in 100.

EXHIBIT E

Credit buyers' response to the statement, "I now feel that using installment credit in purchasing my new car was a good idea."

Cash buyers' response to the statement, "I now feel that paying cash for my new car was a good idea."

Respondent	Credit buyer	Rank	Respondent	Cash buyer	Rank
1	6	55	1	3	31.5
2	6	55	2	2	23.5
3	6	55	3	2	23.5
4	5	50	4	2	23.5
5	5	50	5	2	23.5
6	5	50	6	1	10
7	5	50	7	1	10
8	5	50	8	1	10
9	5	50	9	1	10
10	5	50	10	1	10
11	4	41	11	1	10
12	4	41	12	1	10
13	4	41	13	1	10
14	4	41	14	1	10
15	4	41	15	1	10
16	4	41	16	1	10
17	4	41	17	1	10
18	4	41	18	1	10
19	4	41	19	1	10
20	4	41	20	1	10
21	4	41	21	1	10
22	3	31.5	22	1	10
23	3	31.5	23	1	10
24	3	31.5	24	1	10
25	3	31.5			
26	3	31.5			$R_2 = 315.5$
27	3	31.5			
28	3	31.5			
29	2	23.5			
30	2	23.5			
31	2	23.5			
32	2	23.5			
		$R_1 = 1280$			

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{2} - R_2$$

$$U = (32)(24) + 24(24+1) - 316$$

$$U = 752$$

Knowing that U = 752, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)(N_1 + N_2 + 1)}{12}}}$$

$$= \frac{752 - \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)(32+24+1)}{12}}}$$

$$= \frac{752 - 384}{\sqrt{3648}} = \frac{368}{60.4}$$

$$= 6.1$$

Reference to Table A (p. 247) indicates that $Z \geq 6.1$ has a one-tailed probability of there being a difference between cash and credit buyers on this statement of less than one per cent.

EXHIBIT F

Credit buyers' response to the statement, "I am now dissatisfied with using installment credit to pay for my new car."

Cash buyers' response to the statement, "I am now dissatisfied with paying cash for my new car, but I am uncertain what payment plan I should have used."

Respondent	Credit buyer	Rank
1	7	43.5
2	7	43.5
3	7	43.5
4	7	43.5
5	7	43.5
6	7	43.5
7	7	43.5
8	7	43.5
9	7	43.5
10	7	43.5
11	7	43.5
12	7	43.5
13	7	43.5
14	6	23.5
15	6	23.5
16	6	23.5
17	6	23.5
18	6	23.5
19	6	23.5
20	6	23.5
21	6	23.5
22	6	23.5
23	5	13.5
24	5	13.5
25	5	13.5
26	5	13.5
27	5	13.5
28	4	9.5
29	3	7.5
30	2	4.5
31	2	4.5
32	1	1.5
		$R_1=651$

Respondent	Cash buyer	Rank
1	7	43.5
2	7	43.5
3	7	43.5
4	7	43.5
5	7	43.5
6	7	43.5
7	7	43.5
8	7	43.5
9	7	43.5
10	7	43.5
11	7	43.5
12	7	43.5
13	7	43.5
14	6	23.5
15	6	23.5
16	6	23.5
17	6	23.5
18	6	23.5
19	5	13.5
20	4	9.5
21	3	7.5
22	2	4.5
23	2	4.5
24	1	1.5
		$R_2=724.0$

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{2} - R_2$$

$$U = (32)(24) + \frac{24(24+1)}{2} - 724$$

$$U = 344$$

Knowing that U = 752, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)(N_1+N_2+1)}{12}}}$$

$$= \frac{344 - \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)(32+24+1)}{12}}}$$

$$= \frac{344 - 384}{\sqrt{3648}} = \frac{-40}{60.4}$$

$$= -.66$$

Reference to Table A (p. 247) indicates that $Z \geq .66$ has a one-tailed probability of there being a difference between cash and credit buyers on this statement of 25 chances in 100.

EXHIBIT G

Credit buyers' response to the statement, "Although I financed my new car on installment credit I now wish I would have waited until I had cash before buying."

Cash buyers' response to the statement, "I paid cash for my new car, but if I had it to do again I would use credit."

Respondent	Credit buyer	Rank	Respondent	Cash buyer	Rank
1	7	44	1	7	44
2	7	44	2	7	44
3	7	44	3	7	44
4	7	44	4	7	44
5	7	44	5	7	44
6	7	44	6	7	44
7	7	44	7	7	44
8	7	44	8	7	44
9	7	44	9	7	44
10	7	44	10	7	44
11	7	44	11	7	44
12	7	44	12	6	24.5
13	7	44	13	6	24.5
14	7	44	14	6	24.5
15	6	24.5	15	6	24.5
16	6	24.5	16	5	14
17	6	24.5	17	5	14
18	6	24.5	18	5	14
19	6	24.5	19	5	14
20	6	24.5	20	4	9
21	6	24.5	21	4	9
22	6	24.5	22	2	6
23	6	24.5	23	1	2.5
24	6	24.5	24	1	2.5
25	5	14			R_2=667.0
26	5	14			
27	5	14			
28	4	9			
29	2	6			
30	2	6			
31	1	2.5			
32	1	2.5			
		R_1=929.0			

$$U = N_1 N_2 + \frac{N_2(N_2+1)}{} - R_2$$

$$U = (32)(24)\ \frac{24(24+1)}{2} - 667.0$$

$$U = 401$$

Knowing that U = 401, we may find the value of Z by substitution.

$$Z = \frac{U - \frac{N_1 N_2}{2}}{\sqrt{\frac{(N_1)(N_2)\ N_1 + N_2 + 1}{12}}}$$

$$= \frac{401\ \frac{(32)(24)}{2}}{\sqrt{\frac{(32)(24)\ (32+24+1)}{12}}}$$

$$= \frac{401 - 384}{\sqrt{3648}} = \frac{17}{60.4}$$

$$= .28$$

Reference to Table A (p. 247) indicates that $Z \geq .28$ has a one-tailed probability of there being a difference between cash and credit buyers on the statements they were asked of 28 chances in 100.